

LISTING OF CLAIMS

1. **(Currently Amended)** An adapter coupling for connecting a soil sampler barrel to a drill rod, said adapter coupling comprising a barrel adapter for attaching said adapter coupling to the sampler barrel, an isolator pin attached to said barrel adapter, a rod adapter for connecting said adapter coupling to the drill rod, and an isolating mechanism including an isolator box connected to said rod adapter to isolate the sampler barrel from any upward vibratory movement of the drill rod so that the sampler barrel receives only downward motion from the drill rod, and said rod adapter driving said isolator pin during a downward stroke of the drill rod.

2. **(Cancel)**

3. **(Cancel)**

4. **(Cancel)**

5. **(Currently Amended)** The adapter coupling as set forth in claim ~~[4]~~ 1, wherein said rod adapter lifts away from said isolator pin on an upward stroke of the drill rod while said isolator box maintains a coupling therebetween, allowing relative movement between said rod adapter and said isolator pin.

6. **(Original)** The adapter coupling as set forth in claim 5, wherein said isolator box includes a lip and said isolator pin includes a shoulder.

7. **(Original)** The adapter coupling as set forth in claim 6, including a gap between said lip of said isolator box and said shoulder of said isolator pin, said gap being slightly wider when said rod adapter is in contact with said isolator pin than the total amplitude of a vibration stroke of said drill rod.

8. **(Currently Amended)** The adapter coupling as set forth in claim [~~13~~] **1**, wherein said isolator pin is connected to said barrel adapter with a threaded connection and said threaded connection is secured with bolts.

9. **(Original)** The adapter coupling as set forth in claim 8, wherein said bolts extend through threaded apertures in said isolator pin and are turned against an end of said barrel adapter.

10. **(Currently Amended)** A soil sampling system comprising a drill rod, a sampler barrel and an adapter coupling for connecting said sampler barrel to said drill rod, said adapter coupling including a barrel adapter for attaching said adapter coupling to said sampler barrel, an isolator pin attached to said barrel adapter, a rod adapter for connecting said adapter coupling to said drill rod, and an isolating mechanism including an isolator box connected to said rod adapter to isolate said sampler barrel from any upward vibratory movement of said drill rod so that said sampler barrel receives only downward motion from said drill rod, and said rod adapter driving said isolator pin during a downward stroke of said drill rod.

11. **(Cancel)**

12. **(Cancel)**

13. **(Cancel)**

14. **(Currently Amended)** The soil sampling system as set forth in claim [~~13~~] **10**, wherein said rod adapter lifts away from said isolator pin on an upward stroke of said drill rod while said isolator box maintains a coupling therebetween, allowing relative movement between said rod adapter and said isolator pin.

15. **(Original)** The soil sampling system as set forth in claim 14, wherein said isolator box includes a lip and said isolator pin includes a shoulder.

16. **(Original)** The soil sampling system as set forth in claim 15, including a gap between said lip of said isolator box and said shoulder of said isolator pin, said gap being slightly

wider when said rod adapter is in contact with said isolator pin than the total amplitude of a vibration stroke of said drill rod.

17. **(Currently Amended)** The soil sampling system as set forth in claim ~~[[12]]~~ **10**, wherein said isolator pin is connected to said barrel adapter with a threaded connection and said threaded connection is secured with bolts.

18. **(Original)** The soil sampling system as set forth in claim 17, wherein said bolts extend through threaded apertures in said isolator pin and are turned against an end of said barrel adapter.

19. **(Currently Amended)** An adapter coupling for use with a vibratory drill, said adapter coupling comprising a rod adapter for connection to a drill rod, a barrel adapter for connection to a sampler barrel, and an isolating means, including an isolator box connected to said rod adapter and an isolator pin connected to said barrel adapter, for isolating movement of said sampler barrel from upward vibratory movement of said drill rod, said rod adapter driving said isolator pin during a downward stroke of said drill rod.

20. **(Cancel)**

21. **(Cancel)**

22. **(Currently Amended)** The adapter coupling as set forth in claim ~~[[21]]~~ **19**, wherein said rod adapter is removed from said isolator pin on an upward stroke of the drill rod while said isolator box maintains a coupling therebetween, allowing relative movement between said rod adapter and said isolator pin.

23. **(Original)** The adapter coupling as set forth in claim 20, wherein said isolator box includes a lip and said isolator pin includes a shoulder.

24. **(Original)** The adapter coupling as set forth in claim 23 including a gap between said lip of said isolator box and said shoulder of said isolator pin, said gap being slightly wider when

said rod adapter is in contact with said isolator pin than the total amplitude of a vibration stroke of said drill rod.

25. (Currently Amended) The adapter coupling as set forth in claim [~~19~~] 19, wherein said isolator pin is connected to said barrel adapter with a threaded connection that is compressed with bolts extending through threaded apertures in said isolator pin, said bolts being turned against an end of said barrel adapter.